

REMARKS

Claims 1-22 are currently pending in the application. By this amendment, claims 1-4 and 7 are amended for the Examiner's consideration. Figure 7 is also revised. Support for the amendment(s) is provided at page(s) 13 and the originally filed claims of the specification. No new matter is added. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

Allowed Claims

Applicants appreciate the indication that claims 12, 13 and 17 contain allowable subject matter. However, Applicants submit that all of the claims are in condition for allowance for the following reasons.

Objection to Drawings

The drawings were objected to for not including claimed features and for misspelling of monitor in Figure 7.

Applicants provide a revised Figure 7 which now correctly spells "monitor". However, as to the remaining portions of the objection, Applicants direct the Examiner's attention to Figure 3 which shows the hood at reference number 132. Accordingly, every feature of the claimed invention is shown.

Applicants respectfully request withdrawal of the objection to the drawings.

Objection to Claims

Claim 3 was objected to based on a minor grammatical error. In accordance with the Examiner's helpful instructions, claim 3 has been amended to now recite "an" prior to "item".

Applicants now request withdrawal of the objection to claim 3.

35 U.S.C. §102 Rejection

Claims 1-3, 5-11 and 18-22 were rejected under 35 U.S.C. §102(b) for being anticipated by U. S. Patent No. 5,620,102 to Finch, et al. This rejection is respectfully traversed.

Invention

The invention is directed to a package divert mechanism used for sorting mail and other packages and items into appropriate bins for future delivery. In the system and method of the invention, the package divert mechanism includes a frame adapted for use with any type of conveyor including, for example, a roller type conveyor or a belt conveyor. In aspects of the invention, the frame includes an entrance and three exits. A diverting mechanism, which may include a moveable blade, extends within the frame and is capable of moving between opposing exits. In use, the diverting mechanism is capable of diverting packages in two directions.

In embodiments, covers or hoods are provided over the frame members to protect operators during operation. The hoods are associated with a plurality of sensors or interlock switches for detecting the position of the hoods. The interlock switches provide a shut off signal to the control system when any of the hoods are in an upright or open position. The system further includes several other sensors, relays and potentiometers. For example, the system includes:

1. home sensors to detect the position of the diverting mechanism between a first or second position with respect to sides of the conveyer;
2. over travel sensors to detect an over travel of the diverting mechanism;
3. a potentiometer for adjusting or controlling a speed of the diverting mechanism;
4. an over current sensor monitoring a current associated with the motor to provide an input signal to shut down the system if a current exceeds a predetermined

threshold, e.g., when packages are “jammed” or if a weight of the package exceeds a threshold limit; and

5. photosensors used to detect a flow of a package entering and exiting the system.

In use, the method of the invention includes locating a first home position and a second home position and positioning the diverting mechanism at one of the first home position and the second home position. A determination is made as to which diverting direction the items are to be diverted. The diverting mechanism is controlled in accordance with the diverting direction.

Finch Reference

The Examiner is of the opinion that the Finch reference shows all of the features of claims 1-3, 5-11 and 18-22. Applicants do not agree with the Examiner and submit that the claimed invention is distinguishable over Finch.

Finch is directed to a single direction divert mechanism for use with a roller type or belt conveyor. The divert mechanism of Finch is only capable of moving parcels in a single direction via the use of a parcel guiding apparatus configured to be movable across the width of the conveyor. (See Figure 1.) As disclosed at col. 3, lines 20-25:

The apparatus 10 is provided with a plurality of parcel guiding apparatus (plates) 36, each positioned to direct a parcel into one container, 22, 24, 25, 26, 28 or 30. The parcel guiding apparatus 36 are mounted on rails (See FIG. 2) so that they can move in a direction parallel to the length of the rollers 14 and across the width of the conveyor 12.

As seen from Figure 1, only one container is associated with each of the parcel guiding apparatus. However, in the present invention, the diverting mechanism can divert packages in two directions. This is a significant advantage over Finch. In essence, the present invention has double the capacity as Finch.

Additionally, in embodiments of the present invention, the frame includes an entrance and a plurality of exits and a gliding mechanism adapted to move between opposing exits of the plurality of exits. However, in one embodiment of Finch, the frame member is positioned below the conveyor and does not include any exits. Of course, since there are no exits, the parcel guiding apparatus cannot move between opposing exits. In another embodiment shown in Figure 6, the frame is located above a belt conveyor. In this embodiment, there would be only one exit, but not an exit of a frame. This is simply because the divert mechanism of Finch is attached to an overhang bar as shown in Figure 6 (which does not form a frame as used in the recited invention).

Also, the Finch system does not include many of the sensors and the like of the present invention, nor would these sensors and the like be required or even remotely contemplated by Finch. In Finch, the following sensors and the like are provided:

1. parcel sensor 108 to indicate the presence or absence of a parcel positioned at guide control module 110 on conveyor 12 and to reset stop gate 20;
2. parcel sensor 112 to indicate the presence or absence of a parcel positioned at guide control module 114 on conveyor;
3. photocell 90 to show that a parcel is present at the stop gate 20;
4. photocell 92 to sense the presence of a package downstream of stop gate 20; and
5. photocell 96 to effect tracking of the parcel by matching the parcel position with the parcel code input 100.

However, Finch does not show:

1. an over current sensor for determining whether a current associated with the actuator exceeds a threshold limit,

2. at least one home sensor for detecting a home position of the moveable diverting mechanism,
3. at least one over travel sensor for detecting an over travel position of the moveable diverting mechanism, or
4. momentary contacts which provide an input signal to control the movement of the moveable diverting mechanism.

In fact, Applicants submit that these sensors would not even be contemplated by the Finch system. In Finch, a gas or air cylinder is used. In this system, there would be no need to have an over current sensor since there is no actuator. Additionally, since the divert mechanism of Finch is a one way divert mechanism, there would be no requirement to have a home sensor. In the present invention may be necessary, in embodiments, to determine the position of the diverting mechanism so that a package or parcel can be diverted in the proper direction. Also, there is no disclosure in Finch concerning an over travel sensor. Instead, as shown in Figure 2, there appears to be mechanical "stops" on the bars 39.

Applicants further submit that since the Finch apparatus is a one way divert mechanism, the method of the presently claimed invention is also distinguishable over Finch. By way of example, Finch does not show:

locating a first home position and a second home position
of a diverting mechanism;
positioning the diverting mechanism at one of the first
home position and the second home position;

Instead, in Finch, the divert mechanism would always return to its original position in order to divert the parcel towards the single direction. Also, in Finch, as discussed above, the divert mechanism would not move items in a first and a second position (claim 19). Nor, is there any disclosure concerning detecting: (i) jammed items, (ii) exceeding a threshold physical

characteristic limit of an item, (iii) the diverting mechanism exceeding a travel limit and (iv) an operator has open access to the diverting mechanism.

Accordingly, Applicants respectfully request that the rejection over claims 1-3, 5-11 and 18-22 be withdrawn.

35 U.S.C. §103 Rejection

Claims 4 and 14-16 were rejected under 35 U.S.C. §103(a) over Finch. This rejection is respectfully traversed.

The Examiner is of the opinion that Finch shows all of the elements of claims 4 and 14-16 except a downward extending blade as the diverting mechanism. Applicants submit that many features of these claims are not shown or suggested by Finch and that these claims are distinguishable over Finch.

By way of an example, Finch does not show a frame having an entrance and a plurality of exits. In Finch, there would only be the need for one exit since this system is a single direction divert mechanism. Finch also does not show a gliding mechanism extending across a frame member of the frame and adapted to move between opposing exits of the plurality of exits. Again, if any interpretation were to be given to the Finch disclosure, only one exit would be required and contemplated. Nor does Finch show:

1. at least one home sensor for detecting a home position of the downward extending moveable blade member,
2. at least one over travel sensor for detecting an over travel position of the downward extending moveable blade member,
3. an over current sensor for determining whether a current associated with an actuator of the downward extending moveable blade member exceeds a threshold limit, or
4. momentary contacts which provide an input signal to control the movement of the downward extending moveable blade member.

Lastly, Finch does not show or suggest that the surface of the divert mechanism can be used to divert the item in both directions. Instead, only one surface is designed for diverting the item. As discussed above, Applicants submit that Finch would have no need for the above sensors and the like. Accordingly, there would simply be no motivation to provide such sensors and the like in the Finch system.

Accordingly, Applicants respectfully request that the rejection over claims 4 and 14-16 be withdrawn.

CONCLUSION

Applicants appreciate the indication of allowable subject matter. However, in view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 23-1951.

Respectfully submitted,



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